07/20/2017 15:30 UTC

The following graphs represent the coordinated launch for Langley Research Center (LaRC; 37.1024, -76.3929) and the Chesapeake Bay Bridge Tunnel 3rd Island (CBBT; 37.0366, -76.0767) on 07/20/2017 at approximately 15:30 UTC. This launch coincided with the second SHERPA flight. Wind at both sites came generally from the southwest. Preliminary analysis suggests a probable boundary layer around 1600 m at LaRC and 1400 m at CBBT. Potential temperature profiles show largest divergence between sites in the first 1500 m, with CBBT having lower potential temperature (maximum difference of about 3 K). CBBT had a relatively moderate drop in potential temperature in the first 200 m compared to LaRC. Potential temperature profile was in very close agreement between CBBT and LaRC from 1500 m to 5000 m with difference of less than 0.5 K.

Preliminary observations suggest some potentially interesting differences in ozone mixing ratio profiles above CBBT and LaRC with some similarities in the profile. CBBT appears to have a higher surface ozone mixing ratio compared to LaRC (almost 15 ppbv). CBBT ozone mixing ratio increased to 80 ppbv around 250 m, then decreased to values similar to LaRC around 500 m. Ozone mixing ratio above both CBBT and LaRC appears to have generally fluctuated around 65 ppbv to 75 ppbv from 500 m to 3800 m. From 3800 m to 5000 m ozone mixing ratio at LaRC and CBBT appears to have increased with maximum at 4500 m (90 ppbv) and then decreased to 65 ppbv at 5000 m.

PLEASE NOTE: This data is preliminary and should not be used for official business until certified by NASA technical staff.

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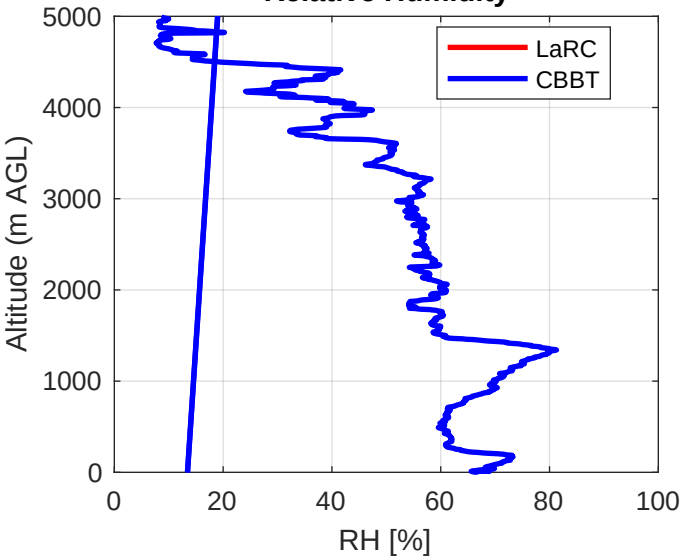
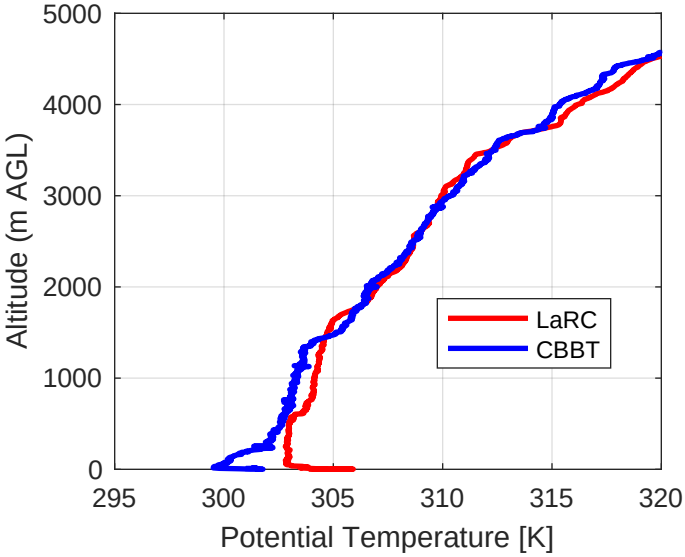
CBBT Sonde POC: Travis Knepp (travis.n.knepp@nasa.gov)

Sonde Data: 07/20/2017 15:51 UTC (LaRC) and 15:33 UTC (CBBT)

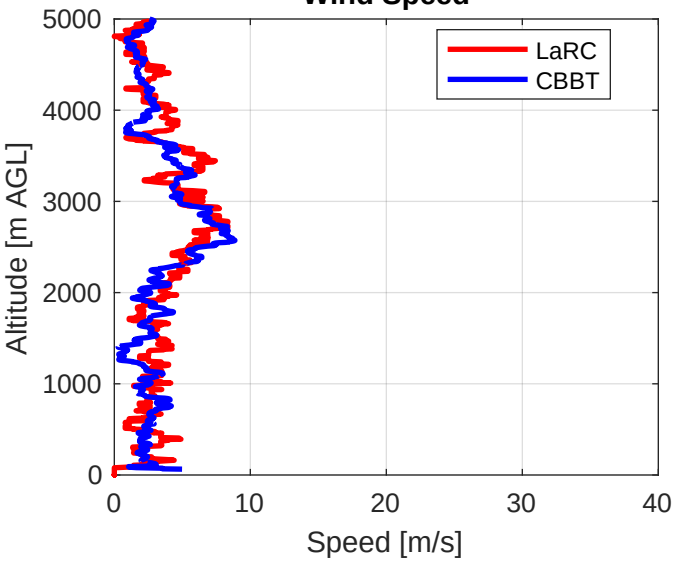
Relative Humidity



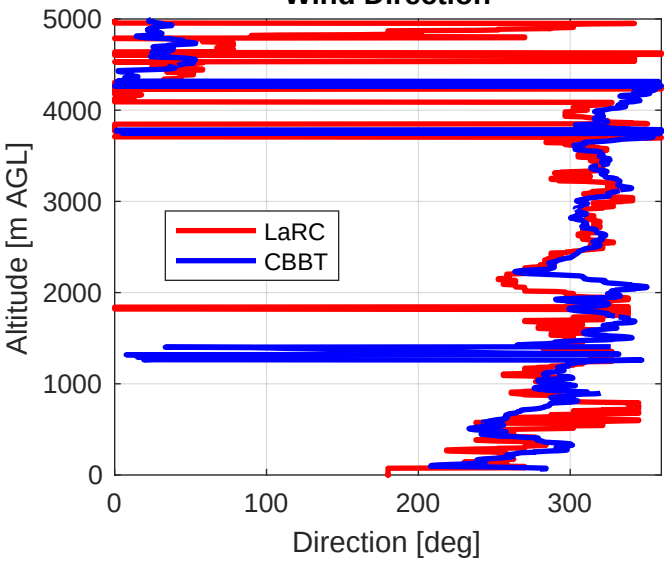
Theta



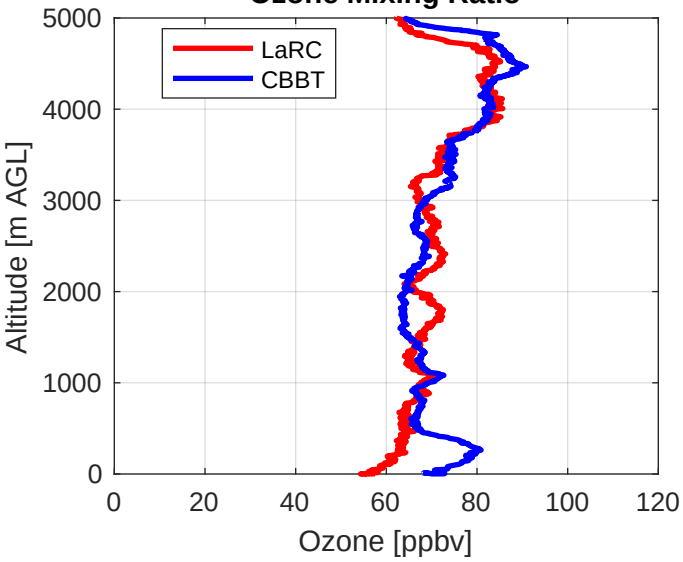
Wind Speed



Wind Direction



Ozone Mixing Ratio



Ozonesonde Map [ppbv]